
पशु आहार घटक के रूप में विलायक निष्कर्षित
चावल की भूसी (तेल रहित चावल की भूसी)
— विशिष्टि
(तीसरा पुनरीक्षण)

**Solvent Extracted Rice Bran (De-
Oiled Rice Bran) as Livestock Feed
Ingredient — Specification**
(*Third Revision*)

ICS 65.120

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भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुर शाह ज़फ़र मार्ग, नई दिल्ली - 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002
www.bis.gov.in www.standardsbis.in

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FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Animal Husbandry, Feeds and Equipment Sectional Committee had been approved by the Food and Agriculture Division Council.

Solvent extracted rice bran (DORB) finds extensive application as an ingredient in compounded livestock feed as well as in poultry feeds due to the fact that it is more stable over a prolonged period if proper quality control is exercised in its production. It is therefore expected that this standard will help in exercising necessary quality control and ensure production of solvent-extracted rice bran of proper quality.

This standard was first published in 1966 as an *Emergency* Standard (IS 3593 E-1966) based on the data made available to the *Ad-hoc* Consultative Panel set up for the purpose on the recommendation of Economic Secretaries of the Government of India. The first revision of the standard was published in 1968 in order to normalize the *Emergency* Standard. The standard was subsequently revised in 1979 in respect of its requirements pertaining to crude fat or ether extract, crude protein and acid insoluble ash.

In this revision, the standard has been updated considering latest technological developments and manufacturing practices. Following major changes have been made in this revision:

- a) Grade 2 has been removed considering its poor quality and non-availability in the market.
- b) Requirement for Aflatoxin B1 and total ash has been introduced in the standard.
- c) Methods of tests prescribed for determination of crude protein, crude fibre and acid insoluble ash have been updated.

The composition of the Committee responsible for formulation of the standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

SOLVENT EXTRACTED RICE BRAN (DE-OILED RICE BRAN) AS LIVESTOCK FEED INGREDIENT — SPECIFICATION

*(Third Revision)***1 SCOPE**

This standard prescribes the requirements and the methods of sampling and test for solvent-extracted rice bran (DORB) for used as livestock feed ingredient.

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
1070 : 1992	Reagent grade water (<i>third revision</i>)
1712 : 2022	Cottonseed oilcake as livestock feed ingredient — Specification (<i>third revision</i>)
2052 : 2009	Compounded feeds for cattle — Specification (<i>fourth revision</i>)
3470 : 2017	Hexane, Food grade — Specification (<i>second revision</i>)
7874 (Part 1) : 1975	Methods of tests for animal feeds and feeding stuffs: Part 1 General methods
IS/ISO 5983 (Part 1) : 2005	Animal feeding stuffs — Determination of nitrogen content and calculation of crude protein content: Part 1 Kjeldahl method

5983 (Part 2) : 2021/ISO 5983-2 : 2009 Animal feeding stuffs — Determination of nitrogen content and calculation of crude protein content: Part 2 Block digestion and steam distillation method (*first revision*)

IS/ISO 6865 : 2000 Animal feeding stuffs — Determination of crude fibre content — Method with intermediate filtration

14826 : 2021/ISO 5985 : 2002 Animal feeding stuffs — Determination of ash insoluble in hydrochloric acid (*first revision*)

IS/ISO 14718 : 1998 Animal feeding stuffs — Determination of aflatoxin B₁ content of mixed feeding stuffs — Method using high-performance liquid chromatography

ISO 17375 : 2006 Animal feeding stuffs — Determination of aflatoxin B₁

3 DESCRIPTION

The solvent extracted rice bran (DORB) shall be obtained by extraction of oil by means of a solvent from the rice bran. The rice bran is the pericarp or bran layer of the rice obtained during the process of regular milling of rice. The solvent-extracted rice bran shall have been subjected to heat and steam treatment under controlled and regulated conditions so as to remove traces of solvent.

4 REQUIREMENTS**4.1 General**

The material shall be free from musty and stale odour, sour or rancid taste, dirt and extraneous matter. The

material shall be free from fungal growth and insect infestation.

4.2 Solvent for Extraction

Only hexane of food grade conforming to IS 3470 shall be used for extracting oil from rice bran.

4.3 The material shall also conform to the requirements prescribed in Table 1.

Table 1 Requirements for Solvent Extracted Rice Bran (DORB) as Livestock Feed Ingredient
(Clause 4.3)

Sl No.	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Moisture, percent by mass, <i>Max</i>	10.0	4 of IS 7874 (Part 1)
ii)	Crude protein ($N \times 6.25$), percent by mass, <i>Min</i>	16.0	IS/ISO 5983 (Part 1)* or IS 5983 (Part 2)
iii)	Crude fibre, percent by mass, <i>Max</i>	14.0	IS/ISO 6865
iv)	Total ash, percent by mass, <i>Max</i>	11.0	9 of IS 7874 (Part 1)
v)	Acid insoluble ash, percent by mass, <i>Max</i>	3.0	Annex A of IS 1712 or IS 14826*
vi)	Aflatoxin B ₁ (ppb), <i>Max</i>	50.0	IS/ISO 14718* or ISO 17375 or AOAC 2003.02

NOTES

1 The values specified for requirements at SI No. (ii) to (vi) are on moisture-free basis.

2 In case of dispute, the test methods given above and wherever indicated by '*' shall be the referee method.

3 For crude fibre, the manual method given in IS/ISO 6865 shall be the referee method.

f) Best before date in month and year format; and

g) Any other requirements as specified under the *Legal Metrology (Packaged Commodities) Rules*, 2011.

5 PACKING AND MARKING

5.1 Packing

Unless otherwise agreed to between the purchaser and the vendor, the material shall be packed in sound jute or HDPE bags. The mouth of each bag shall be either machine-stitched or rolled over and hand-stitched with strong jute twine.

5.2. Marking

5.2.1 Each bag shall be legibly and indelibly marked with the following information:

- Name of the material;
- Name and address of the manufacturer;
- Batch or code number;
- Net mass in kg;
- Date of packing;

5.2.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

6 SAMPLING

Representative samples of the material for ascertaining conformity to this standard shall be drawn according to the method prescribed in Annex H of IS 2052.

7 TESTS

7.1 Tests shall be carried out as prescribed in col (4) of Table 1.

7.2 Quality of Reagents

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the test results.

ANNEX A
(Foreword)

COMMITTEE COMPOSITION

Animal Husbandry, Feeds and Equipment Sectional Committee, FAD 05

<i>Organization</i>	<i>Representative (s)</i>
In Personal Capacity (<i>Former Director, Indian Veterinary Research Institute, Izzatnagar</i>)	DR R. K. SINGH (Chairman)
All India Poultry Breeders Association, New Delhi	DR A. K. RAJPUT
Animal Welfare Board of India, Faridabad	DR PRACHI JAIN DR DEBALINA MITRA (<i>Alternate</i>)
Association of Indian Pet Food Manufacturers, New Delhi	DR AKANKSHA SINGH SHRI MANISH SINGH (<i>Alternate</i>)
Centre for Science and Environment, New Delhi	SHRI AMIT KHURANA
Centre of Analysis and Learning in Livestock and Food, Anand	DR RAJESH NAIR DR RAJEEV CHAWLA (<i>Alternate</i>)
Chhattisgarh Kamdhenu Vishwavidyalaya, Raipur	DR SANJAY SHAKYA DR MANOJ KUMAR GENDLEY (<i>Alternate</i>)
Compound Livestock Feed Manufacturers Association of India, Navi Mumbai	MS CHANDRIKA VENKATESH SHRI SURESH DEORA (<i>Alternate</i>)
CSIR - Central Drug Research Institute, Lucknow	DR D. S. UPADHYAY DR DHANANJAY HANSDA (<i>Alternate</i>)
Department of Animal Husbandry and Dairying, Panchkula	DR BIRENDER SINGH LAURA DR RAJIV BANGER (<i>Alternate</i>)
Federation of Indian Animal Protection Organizations, New Delhi	MS SIRJANA NIJJAR MS VARNIKA SINGH (<i>Alternate</i>)
Food Safety and Standards Authority of India, New Delhi	DR K. ABIRAMI MS MANPREET KOUR (<i>Alternate</i>)
Guru Angad Dev Veterinary and Animal Sciences, University, Ludhiana	DR J. S. LAMBA DR JASMINE KAUR (<i>Alternate</i>)
ICAR- Central Avian Research Centre, Bareilly	DIRECTOR CARI DR S. K. BHANJA (<i>Alternate</i>)
ICAR-Central Institute for Research on Buffaloes, Hisar	DR P.C. LAILER DR AVIJIT DEY (<i>Alternate</i>)
ICAR-Central Sheep and Wool Research Institute, Avikanagar	DR RANDHIR SINGH BHATT DR SROBANA SARKAR (<i>Alternate</i>)
ICAR - Directorate of Poultry Research, Hyderabad	DR R. N. CHATTERJEE DR S. V. RAMA RAO (<i>Alternate I</i>) DR M.V. L. N. RAJU (<i>Alternate II</i>)
ICAR - Indian Veterinary Research Institute, Izzatnagar	DR A. K. VERMA
ICAR-National Research Centre on Equines, Hisar	DR S. C. MEHTA DR R. A. LEGHA (<i>Alternate</i>)
ICAR-National Research Centre on Pig, Guwahati	DR KESHAB BARMAN DR SANTANU BANIK (<i>Alternate</i>)
Indian Council of Agricultural Research, New Delhi	DR A. K. TYAGI

Indian Federation of Animal Health Companies, Mumbai

Ministry of Fisheries, Animal Husbandry and Dairying,
Department of Animal Husbandry and Dairying, New Delhi

National Dairy Development Board, Anand

National Dairy Research Institute, Karnal

National Egg Coordination Committee, New Delhi

National Institute of Animal Nutrition and Physiology, Bengaluru

PETA India, Mumbai

People for Animals, New Delhi

Poultry Federation of India, Sonipat
Tamil Nadu Veterinary and Animal Sciences University, Chennai

BIS Directorate General

DR V. K. SAXENA (*Alternate*)
DR P. G. PHALKE
DR TANWEER ALAM (*Alternate*)
DR H. R. KHANNA
DR SUJIT NAYAK (*Alternate I*)
DR ANIBENCOI JACOB (*Alternate II*)
DR V. SRIDHAR
DR PANKAJ SHERASIA (*Alternate*)
DR NITIN TYAGI
DR SACHIN KUMAR (*Alternate*)
SHRI AJIT SINGH
SHRI BHAGWATI SINGH (*Alternate*)
DR RAGHAVENDRA BHATTA
DR D. T. PAL (*Alternate*)
DR MANILAL VALLIYATE
MS SWATI SUMBLY (*Alternate*)
MS GAURI MAULEKHI
MS SHREYA PAROPKARI (*Alternate*)
SHRI VIJAY SARDANA
DR A. NATRAJAN
DR R. RAJENDRAN (*Alternate*)
SHRIMATI SUNEETI TOTEJA,
SCIENTIST 'E' and Head (FAD)
[Representing Director General (*Ex-officio*)]

Member Secretary
Ms NITASHA DOGER
SCIENTIST 'D', (FAD), BIS

Panel for reviewing the Indian Standards on feed and feed ingredients, FAD 05/Panel 11

<i>Organization</i>	<i>Representative (s)</i>
National Dairy Development Board, Anand	DR V. SRIDHAR, (<i>Convenor</i>)
CSIR-Central Drug Research Institute, Lucknow	DR DHANANJAY HANSDA
Centre of Analysis and Learning in Livestock and Food, Anand	DR RAJESH NAIR
Compound Livestock Feed Manufacturers Association of India, Navi Mumbai	MR. R. S. MASALI
ICAR - Indian Veterinary Research Institute, Izzatnagar	DR A. K. VERMA
Indian Federation of Animal Health Companies, Mumbai	DR TANWEER ALAM (<i>Alternate</i>)
National Dairy Development Board, Anand	DR PANKAJ SHERASIA
National Dairy Research Institute, Karnal	DR NITIN TYAGI
Tamil Nadu Veterinary and Animal Sciences University, Chennai	DR A. NATRAJAN

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BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002

Telephones: 2323 0131, 2323 3375, 2323 9402

Website: www.bis.gov.in

Regional Offices:

	Telephones
Central : 601/A, Konnectus Tower -1, 6 th Floor, DMRC Building, Bhavbhuti Marg, New Delhi 110002	{ 2323 7617
Eastern : 8 th Floor, Plot No 7/7 & 7/8, CP Block, Sector V, Salt Lake, Kolkata, West Bengal 700091	{ 2367 0012 2320 9474
Northern : Plot No. 4-A, Sector 27-B, Madhya Marg, Chandigarh 160019	{ 265 9930
Southern : C.I.T. Campus, IV Cross Road, Taramani, Chennai 600113	{ 2254 1442 2254 1216
Western : Plot No. E-9, Road No.-8, MIDC, Andheri (East), Mumbai 400093	{ 2821 8093

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